

Summary Explanations of Significant SAR Cost Changes

(As of December 31, 2004)

Army:

ATIRCM/CMWS (Advanced Threat Infrared Countermeasure/Common Missile Warning System) – Program costs increased \$1,418.9 million (+43.0%) from \$3,298.1 million to \$4,717.0 million, due primarily to an increase in the number of mission (“B”) kits from 631 to 1076 (+\$473.8 million), additional modification of the A-kits for ATIRCM to accommodate early installation/acceleration of CMWS (+\$241.3 million), the cost of A-kit integration on additional platforms (+\$233.3 million), an increase in the production facilities cost due to program acceleration (+\$68.7 million), other estimating changes (+\$105.0 million), and the application of revised escalation rates (+\$91.3 million). Program costs also increased due to an increase in spares to support more storage locations (+\$336.9 million), increase for training devices and simulator upgrades to support more platforms (\$44.1 million), and system integration lab and test instrumentation package upgrades. These increases were partially offset by the schedule acceleration of the mission kits and A-kits (-\$234.3 million).

Black Hawk UH-60M – Program costs increased by \$5,962.6 million (+40.1%) from \$14,884.5 million to \$20,847.1 million, due primarily to the procurement of new aircraft vice remanufacturing older airframes (+\$2,702.5 million), the incorporation of improvements and increased capabilities (+\$2,174.4 million), a revised estimate for software support (+\$337.5 million), an increase in procurement quantity of 14 helicopters from 1213 to 1227 (+\$194.5 million), and revised escalation indices (+\$527.5 million).

CH-47F – Program costs increased by \$5,173.9 million (+72%) from \$7,182.5 million to \$12,356.4 million, due primarily to an increase of 173 helicopters from 337 to 510 (+\$3,420.9 million) and associated support costs (+\$251.9 million), and the procurement of new airframe structural components rather than remanufacturing the older components (+\$1,745.4 million). These increases were partially offset by the acceleration of the annual procurement buy profile (-\$209.0 million).

EXCALIBUR – Program costs decreased \$1,692.1 million (-42.9 %) from \$3,942.9 million to \$2,250.8 million, due primarily to a quantity decrease of 31,483 projectiles from 61,483 to 30,000 projectiles (-\$1,879.3 million). The quantity decrease was partially offset by increased cost due to a stretch-out of the annual procurement buy profile (+\$164.5 million).

FBCB2 (Force XXI Battle Command Brigade and Below) – Program costs increased by \$220.0 million (13.9%) from \$1,581.9 million to \$1,801.9 million, due primarily to a quantity increase of 6,774 units from 21,054 to 27,828 to support Operation Iraqi Freedom and Operation Enduring Freedom (\$174.6 million) and associated schedule, engineering, and estimating allocations* (+\$19.5 million), and an added requirement for post deployment software support in the Gulf region and the Balkans (+\$17.2 million).

FCS (Future Combat Systems) – Program costs increased by \$6,277.7 million (+6.8%) from \$92,600.9 million to \$98,878.6 million due primarily to the FCS Program restructure that the Army announced in July 2004. The restructure is to strengthen the FCS Program and simultaneously improve the Current Force through early delivery of selected FCS capabilities. The adjustments maintain the Army’s focus on the FCS-equipped Unit-of-Action (UA)

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development and also substantially reduce program risk. The modifications to the FCS Program acquisition strategy fall into four primary categories of priority program development: 1) Communications/Information Network, 2) Unattended Munitions, 3) Unmanned systems, and 4) Manned Ground Vehicles (MGV). The revised program also now includes the five previously deferred FCS core systems: 1) Unattended Air Vehicle (UAV) Class II, 2) UAV Class III, 3) Armed Robotic Vehicle (ARV) (Assault and Reconnaissance), 4) FCS Recovery and Maintenance Vehicle (FRMV) and 5) the Intelligent Munitions System (IMS). Additionally, the new program includes more robust experimentation and evaluation and the addition of a series of four “spiral out” packages that will insert FCS capability into the Current Force. These “spiral outs” will begin in 2008 and continue every two years through 2014. The majority of the total cost increase is due to the inclusion of the five previously deferred systems, the addition of more experimentation and evaluation, and the spiral insertion of FCS capabilities into the current force.

GMLRS (Guided Multiple Launch Rocket System) – Program costs increased \$1,421.6 million (+11.6%) from \$12,248.9 million to \$13,670.5 million, due primarily to a realignment of the buy quantity from FY 2005-2011 to FY 2018-2020 in order to fund higher priority programs (+\$799.5 million). This stretch-out in the annual procurement buy profile also caused a two-year program slip (+\$284.5 million). The application of revised escalation rates also contributed to the increased costs (+\$352.2 million).

JTRS (Joint Tactical Radio System) Cluster 1 – Program costs increased by \$1,109.9 million (+5.4%) from \$20,522.4 million to \$21,632.3 million due primarily to the application of revised inflation rates (+\$748.1 million), an increase of 985 Air Force and Navy sets from 2,173 to 3,158 (+\$191.6 million) and associated schedule, engineering and estimating allocations* (+\$52.9 million), a deferment of development effort (+\$322.6 million), and a stretch-out of the procurement buy profile (+\$121.1 million). These increases were partially offset by revised program estimates (-\$286.3 million).

JCM (Joint Common Missile) – Program costs decreased by \$7,848.0 million (-96.4%) from \$8,141.3 million to \$293.3 million due to program termination.

Longbow Apache – Program costs increased \$1,560.5 million (+20.9%) from \$7,481.1 million to \$9,041.6 million, due primarily to a quantity increase of 96 aircraft from 501 to 597 aircraft (+\$545.9 million) and associated schedule, engineering, and estimating allocations* (+\$637.8 million). There were also increases in training requirements, contractor support, and initial spares associated with the additional aircraft (+\$115.5 million). Higher estimates for the Modernized Target Acquisition Designation Sight/Pilot Night Vision Sensor (MTADS/PNVS) program (+\$163.2 million) and the application of new escalation indices (+\$55.7 million) also contributed.

MCS (Maneuver Control System) – Program costs increased by \$105.2 million (+16.4%) from \$641.7 million to \$746.9 million due primarily to a quantity increase of 1,901 units from 4,642 to 6,543 (+\$47.1 million), an increase in support and fielding requirements for additional New Equipment Training Teams (+\$40.1 million), and an increase for future software integration and testing efforts (+\$15.7 million).

Stryker – Program costs increased by \$1,746.8 million (+20.2%) from \$8,658.7 million to \$10,405.5 million due primarily to the addition of fielding support and retrofit of vehicle changes in FY09-20 (+\$927.3 million), an increase of 353 vehicles from 2086 to 2439 resulting from a

FY 2005 Congressional plus-up (+\$884.2 million), design and hardware configuration changes to the Nuclear Biological Chemical - Reconnaissance Vehicle (NBC-RV) and Mobile Gun System (MGS) variants (+\$222.1 million), the application of revised inflation rates (+\$65.0 million), and modified MGS Mission Equipment Package (MEP) armor (+\$48.9 million). These increases were partially offset by a revised estimate for hardware mix changes (-\$211.2 million) and updated testing estimates (-\$177.3 million).

Navy:

Advance SEAL Delivery System (ASDS) – Program costs decreased by \$755.7 million (-38.6%) from \$1,956.7 million to \$1,201.0 million, due primarily to a quantity reduction of three ships from five to two ships.

CVN 68 – Program costs for CVN-77, the last ship in the CVN 68 class, increased by \$838.5 million (+15.2%) from \$5,511.6 million to \$6,350.1 million, due primarily to increased production hours and material costs (+\$784.3 million). Other factors included higher costs due to an eight-month schedule slip (+\$86.9 million) and the application of revised escalation rates (+\$112.9 million). Higher costs were partially offset by a decision to terminate development for the planned contractor furnished warfare system and to revert to a legacy-based government furnished system (-\$42.1 million).

DD(X) – Program costs decreased by \$2,252.9 million (-21.8%) from \$10,313.7 million to \$8,060.8 million, due primarily to Congressional language stipulating that the lead ship be funded with procurement funding, vice development funding as previously planned (-\$2,774.8 million). (Note: DD(X) is a pre-Milestone B program and reporting is limited to development costs only pursuant to Section 2432, Title 10, United States Code.) The above decrease was partially offset by additional funding for added capability as a result of Operational Requirements Document (ORD) validation (+\$360.6 million) and the application of revised escalation rates (+\$160.6 million).

EFV (Expeditionary Fighting Vehicle) – Program costs increased by \$1,976.7 million (+18.6%) from \$10,602.3 million to \$12,579.0 million, due primarily to higher estimates for the suspension, engine, transmission, and marine drive (+\$413.7 million) as well as the hull structure, armor, and appendages (+\$280.1 million) and initial spares (+\$143.1 million). Also, there were increases for a one-year shift in the annual procurement schedule (+\$305.3 million), the application of revised escalation rates (+\$299.3 million), and additional efforts on the System Development and Demonstration contract for test support and design maturation (\$+238.5 million).

H-1 Upgrades – Program costs increased \$1,177.2 million (+17.2%) from \$6,827.3 million to \$8,004.5 million, due primarily to costs associated with a four-year extension of the production schedule and revised buy profile (+\$413.7 million); increases in initial spares, integrated logistics support, peculiar support equipment, and for interactive electronic technical manual systems (+\$265.7 million); various estimating adjustments (e.g., for contractor labor and overhead, systems engineering program management, target sight system, etc.) (+\$264.5 million); the application of revised inflation rates (+\$151.9 million); and engineering changes associated with turret modification, other configuration changes, and the addition of nonrecurring flyaway to support build new strategy for UH-1Y (+\$53.5 million).

LPD 17 Class Amphibious Transport Dock Ship – Program costs decreased by \$3,455.0 million (-22.2%) from \$15,582.7 million to \$12,127.7 million due to a reduction of ship procurement quantities from 12 to 9 ships (-\$4,037.6 million). This increase was partially offset by a revised estimate for ship construction, outfitting, and post delivery on the remaining ships (+524.7 million).

MH-60S (Fleet Combat Support Helicopter) – Program costs increased \$1,750.0 million (+29.3%) from \$5,971.9 million to \$7,721.9 million, due primarily to a quantity increase of 34 aircraft from 237 to 271 aircraft (+\$682.4 million) and associated estimating allocation* (-\$74.0 million), an increase due to the additional of Airborne Mine Countermeasures (AMCM) and Armed Helo kits (+\$458.3 million), increases due to the stretch-out of annual buy profile (+\$114.1 million), change in the cost quantity methodology (+\$120.9 million), increased integration and test requirements for AMCM restructure (+\$171.7 million), the application of revised escalation rates (+\$98.9 million), and an increase in engineering and logistics support (+\$85.8 million).

MIDS-LVT (Multifunctional Information Distribution System-Low Volume Terminal) – Program costs increased by \$233.8 million (+12.6%) from \$1,848.8 million to \$2,082.6 million, due primarily to additional F/A-18 integration costs (+\$145.3 million) and to add a second source for MIDS Joint Tactical Radio System (JTRS) to ensure continuous competition (+\$51.9 million).

SSN-774 Virginia Class Submarine – Program costs increased by \$10,764.6 million (+12.9%) from \$83,215.2 million to \$93,979.8 million, primarily due to an updated estimate of shipbuilder hours, material costs, profit, and learning (+\$4,363.4 million), and the application of revised escalation rates (+\$2,832.1 million). There were additional increases related to the delay of three ships from FY 2009-2011 to FY 2017-2018 (+\$3,286.8 million).

Tactical Tomahawk – Program costs increased by \$919.8 million (+28.0%) from \$3,290.3 million to \$4,210.1 million, due primarily to a quantity increase of 614 missiles from 2,790 to 3,404 missiles (+\$440.7 million) and a rephrasing of missile, capsule, and canister procurements in the FY 2006 President's Budget (+\$207.8 million). There were additional increases for higher pricing to reflect actual multi-year contract data (+\$184.3 million) and the application of revised escalation rates (+\$54.2 million).

V-22 – Program costs increased by \$2,461.4 million (+5.1%) from \$48,024.7 million to \$50,486.1 million, due primarily to the additional cost of Block C/20 production for FY 2009 and out (+\$1,006.6 million), the application of revised escalation rates (+\$895.9 million), and a stretch-out of the annual procurement buy profile (+\$415.1 million). There were also increases for Block C development and flight testing (+\$365.8 million), the addition of Block 20/30 development (+\$174.8 million), and the rephrasing of Block 20 capabilities (+\$153.2 million). These increases were partially offset by savings from cost reduction initiatives (-\$618.9 million).

Air Force:

AEHF – Program costs increased \$1,065.6 million (21.2%) from \$5,027.6 million to \$6,093.2 million, due primarily to a 12-month slip in the launch schedule (\$701.3 million), increased

estimate for additional on-orbit operations and anomaly resolution and the radiation hardening program (+\$110.5 million), and additional schedule costs to reduce the risk associated with the concurrent payload and cryptographic development (+\$171.2 million). Factors contributing to the increased cost and the associated 12-month slip to the launch schedule were delayed delivery of Information Assurance products, added testing of payload electronic components, and the replacement of critical electronic parts.

AMRAAM (Advanced Medium Range Air-to-Air Missile) – Program costs increased \$2,419.8 million (+22.5%) from \$10,761.3 million to \$13,181.1 million, due primarily to a quantity increase of 3,344 Air Force and Navy missiles from 10,999 to 14,343 missiles (+\$1,426.3 million) and associated initial spares and peculiar support costs for the additional quantity (+\$128.2 million). There were also increased production support costs due to additional production years (+\$520.8 million) and higher unit costs to incorporate Phase 4 Follow-On capabilities (+\$204.9 million).

C-130J – Program costs decreased by \$10,173.3 million (-62.0%) from \$16,396.5 million to \$6,223.2 million, due primarily to termination of the Air Force program in the FY 2006 President's Budget.

F/A-22 – Program costs decreased \$10,369.5 million (-14.5%) from \$71,693.2 million to \$61,323.7 million, due primarily to a decrease of 99 aircraft in the planned procurement quantity from 271 to 172 aircraft (-\$8,280.5 million) and associated engineering, schedule, and estimating allocations (-\$3,270.4 million), and a decrease in support associated with the quantity decrease (-\$1,107.5 million). This decrease was partially offset by revised escalation rates (+\$891.6 million), new requirements for lab infrastructure (+\$689.0 million), elimination of projected multi-year savings to lots 7-8 (+\$458.9 million), and loss of learning due to project line disruptions (+\$353.0 million).

Wideband Gapfiller Satellite – Program costs increased by \$281.6 million (+18.1%) from \$1,555.8 million to \$1,837.4 million, due primarily to the three-year production gap between satellite 3 and satellites 4 and 5 that resulted in RDT&E migration cost growth and parts obsolescence (+\$110.6 million), procurement cost growth (+\$122.0 million), the upgrade of primary injection points for Satellites 4 and 5 (\$+27.1 million), and the application of revised escalation rates (+\$19.2 million).

DoD:

BMDS (Ballistic Missile Defense System) – Program costs increased \$21,003.1 million (+31.8%) from \$66,120.3 million to \$87,123.4 million, due primarily to field Blocks 08, 10 and 12 capabilities which expand our ability to protect the United States, friends, and allies from a ballistic missile attack. Block 08 adds funding to complete 20 Ground-Based Interceptors (GBIs), 2 Forward Based X-Band Radar - Transportable, 40 Standard Missile 3s, First Terminal High Altitude Area Defense (THAAD) Battery, and an Upgraded Early Warning Radar (UEWR) at Thule, Greenland. Incremental improvements include additional sea-based interceptors, an additional THAAD fire unit, 10 additional (GBI), and UEWRs at Clear Air Station, Eglin Air Force Base, and Otis Air Force Base. Other improvements include funding for a Space Tracking

and Surveillance System constellation and contractor logistics support. Funds were also added to address the program's revised escalation rate (\$1,152.3 million).

Chem Demil-ACWA (Chemical Demilitarization-Assembled Chemical Weapons Alternatives) – Program costs increased \$851.2 million (+21.1%) from \$4,036.6 million to \$4,887.8 million, due primarily to the impact of delaying the ACWA sites to allow for design changes (+\$635.5 million) and the application of revised escalation rates (+\$106.6 million).

Chem Demil -CMA (Chemical Demilitarization-Chemical Materials Agency) – Program costs increased \$6,788.4 million (+35.5%) from \$19,115.8 million to \$25,904.2 million, due primarily to increased costs associated a schedule extension due to changes to operations and closure phases, permits, and changes related to concept/design maturation (+\$5,617.7 million). There were also cost increases for additional staffing to implement the Safety Improvement Program (+\$707.6 million) as well as the application of revised escalation rates (+\$338.9 million).

Chem Demil -CMA NEWPORT (Chemical Demilitarization-Chemical Materials Agency Newport) – Program costs increased \$700.4 million (+57.9%) from \$1,210.6 million to \$1,911.0 million, due primarily to increased cost associated with a schedule extension due to reduced agent-loading impacts and risks associated with “first of its kind” neutralization process, waste generation, and storage.

JSF (Joint Strike Fighter) – Program costs increased \$11,783.3 million (+4.8 %) from \$244,834.3 million to \$256,617.6 million, due primarily to increases for application of revised escalation indices (+\$7,663.7 million), design maturation (+\$5,002.9 million), refined definitions of support requirements (+\$3,942.0 million), and a delay in STOVL (Short Takeoff and Vertical Landing) initial procurement from FY 2007 to 2008 and revised buy profile for all variants (+\$2,281.8 million). These increases were partially offset by a decrease in the costs for standard hardware and general equipment based on refined engineering assessments (-\$7,289.4 million).

JTRS (Joint Tactical Radio Set) Waveform – Program costs increased by \$339.2 million (+34.5%) from \$982.3 million to \$1,321.5 million, due primarily to additional waveform development requirements (+\$344.7 million).

** Note: Quantity changes are estimated based on the original SAR baseline cost-quantity relationship. Cost changes since the original baseline are separately categorized as schedule, engineering, or estimating "allocations." The total impact of a quantity change is the identified "quantity" change plus all associated "allocations."*